CHAPTER 8 - Borrow – 02056

General:

Common Fill or Borrow is obtained from a source outside the right-of-way, for use in construction of Embankment.

Related Sections:

01455: Material Quality Requirements

01741: Final Cleanup

02332: Embankment for Bridge

02912: Topsoil

Borrow Source:

After Contractor notification of desires to use a certain borrow pit, samples are taken to determine if source is acceptable.

Borrow shall conform to required classification. Check specifications for classification, change, and possible gradation maximum.

Before any material is removed from the pit, basis of payment needs to be determined.
If by the cubic yard, the material is to be measured in its original position. Cross sections of pit are necessary. (See specifications for survey requirements)
If by the ton, scales need to be provided to weigh the material. Scales must be certified by State of Utah, Department of Agriculture and a copy of this certification must be submitted to project file.

Preparation of Borrow Source:

Before material is removed, stripping of vegetation and unsatisfactory material shall be required. When possible, cross-section after clearing and grubbing are completed.

If the top surface of the pit is very rough and cross-sections are necessary, the pit should be leveled off to permit accurate cross-sections.

If the source contains different qualities of material, the best quality material shall be placed in the top portion of the embankment.

Hauling and Placing Borrow:

Borrow is hauled and placed in the embankments in lifts, the same as Section 02330. Do not place material on snow, or frozen grade.

The roadway excavation and borrow lifts shall be graded off smoothly so water is not trapped.

Care should be taken to ensure that the material is not wasted and is placed only in required areas

Compaction requirements are the same for borrow as embankment.

Samples should be obtained to check classification and proctor information as per specification or when a change in material occurs.

Daily checks of the lift depth shall be made and the information recorded in the diary.

To obtain compaction it is necessary for the material to be near optimum moisture. The plus or minus near optimum content should be recorded in the diary.

If embankments are constructed against a hillside or existing embankment, the hillside or embankment shall be terraced to prevent slipping.

Route the haul equipment uniformly over the whole grade to aid the compaction.

Subgrade:

When the embankment and excavations are brought to the desired elevations, typical section checks should be made by survey verification.

Soft and yielding spots shall be corrected. Remove any place that is yielding or pumping under wheel load test.

If in Embankment, correction shall be at the Contractor's expense.
In cut sections the Engineer shall determine the method of correction.

Compaction requirements per test area shall be satisfied.

The subgrade surface shall be checked to see if it conforms to true line and grade. Tolerances can be checked with a straightedge, string line, or survey instrument.

Slopes shall be dressed and made true and uniform.

Borrow / Common Fill			
SPEC	INSPECTION LEVEL	INSPECTION OBJECTIVE	INSPECTOR ACTIVITY
02056	Intermittent (same as 02330 Embankment)	Ensure no loose lift exceeds 1.0 ft. Ensure proper compaction equipment is utilized.	Document all activities in daily diary or electronic field book. Document equipment and manpower utilized.
02324	Density: See Minimum Sampling & Testing	Ensure 96% compaction in each layer of embankment prior to placement of next layer.	Document density results. Document station to station of embankment.
02324	Proctor Sample	See: Minimum Sampling & Testing	Use the correct proctor value for material being tested.
02056	Soil Classification	**Borrow:** Insure that material is A-1 to A-4 soil, meet AASHTO 145. **Granular Borrow & Granular Backfill** Borrow: A-1-a soil classification. Meet AASHTO 145.	Check classification results from lab. Check classification results from lab.

EMBANKMENT – Check List

Confirming	Attributes
YES ( ) NO ( ) N/A ( )	Reviewed assigned functions and then reviewed the contract plans, specifications, and special provisions, noting all provisions applicable to the assigned responsibilities.
YES ( ) NO ( ) N/A ( )	Review detail plan sheets for depth of material
YES ( ) NO ( ) N/A ( )	Contact field lab of any placement of Borrow, Granular Borrow / Common Fill
YES ( ) NO ( ) N/A ( )	Review with Level IV, Field Engineer, or Resident Engineer Survey Grad Stakes
YES ( ) NO ( ) N/A ( )	Ensure that material is being placed with optimum moisture before being rolled
YES ( ) NO ( ) N/A ( )	Ensure proper lift thickness is being placed and not exceeded.
YES ( ) NO ( ) N/A ( )	Compaction test are taken and documented with Random Numbers on form T-348 and submitted to field lab or Resident Engineer
YES ( ) NO ( ) N/A ( )	Completed a Daily Diary on all events for the day including Equipment used and skilled and unskilled labor.
YES ( ) NO ( ) N/A ( )	Ensure all erosion control methods are in place and working proper.

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